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The Rollers That Put The Roll In Rolling Stock

WITH the advent of the automobile, Hyatt roller bearings became essential parts in promoting continuous ease of running and freedom from repairs for transportation and farm equipment. The Haynes-Apperson, credited as the first commercial gasoline car, had Hyatt bearings built into it.

The development of the automobile industry and the increase in the use of the automobile has been rapid, and equally rapid has been the multiplication of uses and applications where Hyatt bearings play an important part.

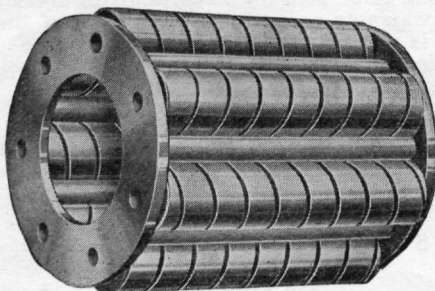
From the humble lawn mower to the haughty motor car, from the finely adjusted motor to the rough and ready logging block and ore conveyor, from the lightly turning windmill to the pounding railroad car, in all fields of activity, Hyatt bearings are vital

factors for efficient and economical operation.

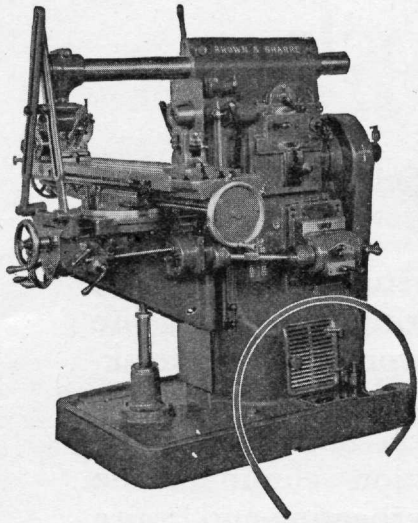
The simple, sturdy construction of these bearings gives long life free from worry about breakdowns or replacements. The easy rolling motion and absence of rubbing friction eliminate the danger of overheating and insure longer life to the bearings and enclosing parts. At the most they require oiling only three or four times a year, permitting not only worthwhile savings in oil but also maintenance and inspection costs.

Steady advances are being made in the application of Hyatt bearings to every field where uninterrupted and economical production are important factors. Our engineering and research departments are always ready to cooperate with you in solving your bearing problems. Make a note of our address now for future reference.

HYATT ROLLER BEARING COMPANY
NEWARK, NEW JERSEY



If you will drop us a line, mentioning the name of your college, we will send you a small Hyatt bearing which you may use as a paper weight or a pocket piece. This will give you a clearer idea of the unique construction which makes the Hyatt roller bearing durable and reliable.



**FOR
Compact
Design-
Economic
Operation-
High
Production**

**The
Brown
&
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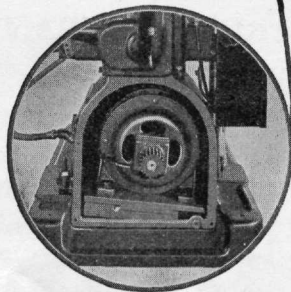
Motor-in-the-Base Milling Machines

THESE machines offer a very compact and efficient production unit. The motor is completely enclosed in a compartment in the base which protects it from oil, chips, dirt, etc., and in addition saves valuable floor space. Ample provision is made for ventilation as louvres set in the sides of the compartment assure a constant circulation of air.

The design of the motor base affords a ready means of removing the motor whenever desired by merely sliding it out in its adjustable ways.

Brown & Sharpe "Motor-in-the-Base" Milling Machines are a machine tool development you should know about.

*Send for your
Copy of the New
No. 138 General Catalog
—It lists our
Complete Line*



BROWN & SHARPE MFG. CO.
PROVIDENCE, R. I., U. S. A.

SHOP LIGHTING.

In an address delivered before the members of the Western Pennsylvania Division of the National Safety Council, Pittsburg, Pa., March, 1918, by C. W. Price, the importance of good lighting in industrial establishments was discussed, and the disadvantages of poor lighting were clearly shown by some figures mentioned by Mr. Price.

A large insurance company analyzed 91,000 accident reports, for the purpose of discovering the causes of these mishaps. It was found that 10% was directly traceable to inadequate lighting and in 13.8% the same cause was a contributory factor. The British Government in a report of the investigation of causes of accidents determined a close parallel to the findings of the insurance company above quoted. The British investigators found that by comparing the four winter months with the four summer months, there were 39.5% more men injured by stumbling and falling in winter than in summer.

Mr. John Calder, a pioneer in safety work, made an investigation of accident statistics covering 80,000 industrial plants. His analysis covered 700 accidental deaths, and of these 45% more occurred during the four winter months than during the four summer months.

Mr. C. L. Eschleman, in a paper published in the proceedings of the American Institute of Electrical Engineers several years ago, reported the result of an investigation of a large number of plants in which efficient lighting had been installed. He found that in such plants as steel mills, where the work is of a coarse nature, efficient lighting increased the total output 2%; in plants, such as textile mills and shoe factories, the output was increased 10%.

In an investigation of the causes of eye fatigue, made by the Industrial Commission of Wisconsin, it was found that in a large percentage of industries, such as shoe, clothing and textile factories, the lack of proper lighting (both natural and artificial) resulted in eye fatigue and loss of efficiency. At one knitting mill, where a girl was doing close work under improper lighting conditions, her efficiency dropped 50% every day during the hours from 2:30 to 5:30 P. M.

The above mentioned incidents indicate how important a factor lighting is in the operation of the industrial plant. It has been well said, "Light is a tool, which increases the efficiency of every tool in the plant." Glare or too much light is as harmful as not enough lighting, and in no case should the eyes of the workers be exposed to direct rays, either of sun or electric light.

Windows and reflectors should always be kept clean; that is, cleaning them at least once a week, for where dust and dirt are allowed to collect, efficiency of the light is decreased as much as 25%.

Good lighting, in addition to its other marked advantages, is a strong incentive towards keeping working places clean, for it clearly exposes any place where dirt or other material has been allowed to collect. White walls and clean windows glazed with Factrolite Glass will eliminate the sun glare and increase the illumination 25 to 50 feet from the window from 38% to 72% as compared with plain glass.

Lighting is of primary importance to every employer and fully warrants a careful investigation of the subject, for there is no substitute for good lighting, and if it is not supplied the efficiency of the entire working force must suffer a serious reduction.

If you are interested in the distribution of light through Factrolite, we will send you a copy of Laboratory Report—"Factrolited."

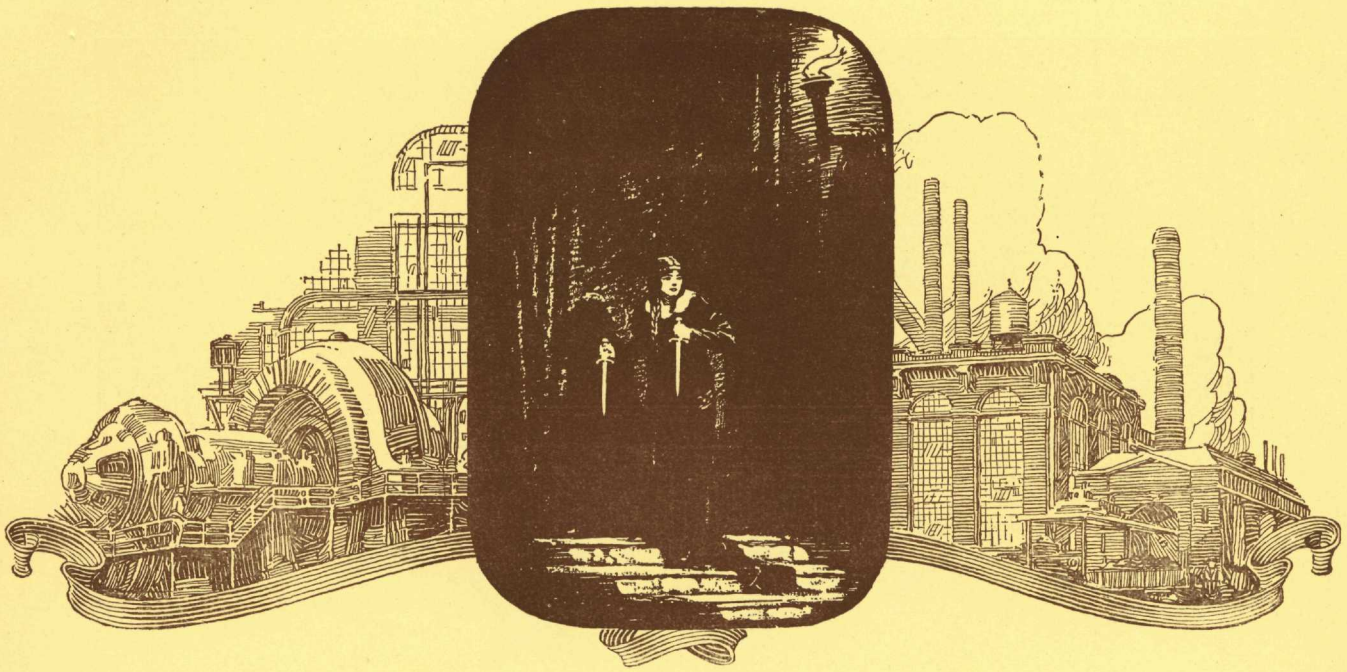
MISSISSIPPI WIRE GLASS CO.,

220 Fifth Avenue,

St. Louis.

New York.

Chicago.



“THE PLAY’S THE THING”

*J*OHN BARRYMORE himself would “get the hook” if he did not know his cues, or read his lines as called for by the action of the play.

Engineers get cues, too—from the industrial drama of which they are a part. Like actors, their performance must fit the action of an economic play.

Thus the reason that the journals, the societies, the schools, colleges, teachers, and well-known public men, are urging engineers to study economics—to learn the nature and effect of economic laws.

To build the largest generator or the smallest meter, for example, is not

always in itself a great engineering feat. The feat consists in having it ready at a time, a price, and with such features as the prevailing economic situation calls for.

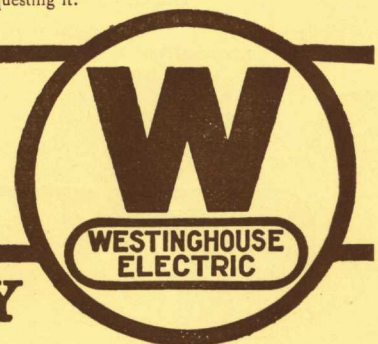
In this sense engineers—and particularly Westinghouse engineers—must be “practicing economists”. They must follow closely the “action of the play”—analyzing fundamental conditions in every field, and calculating their causes and probable effects.

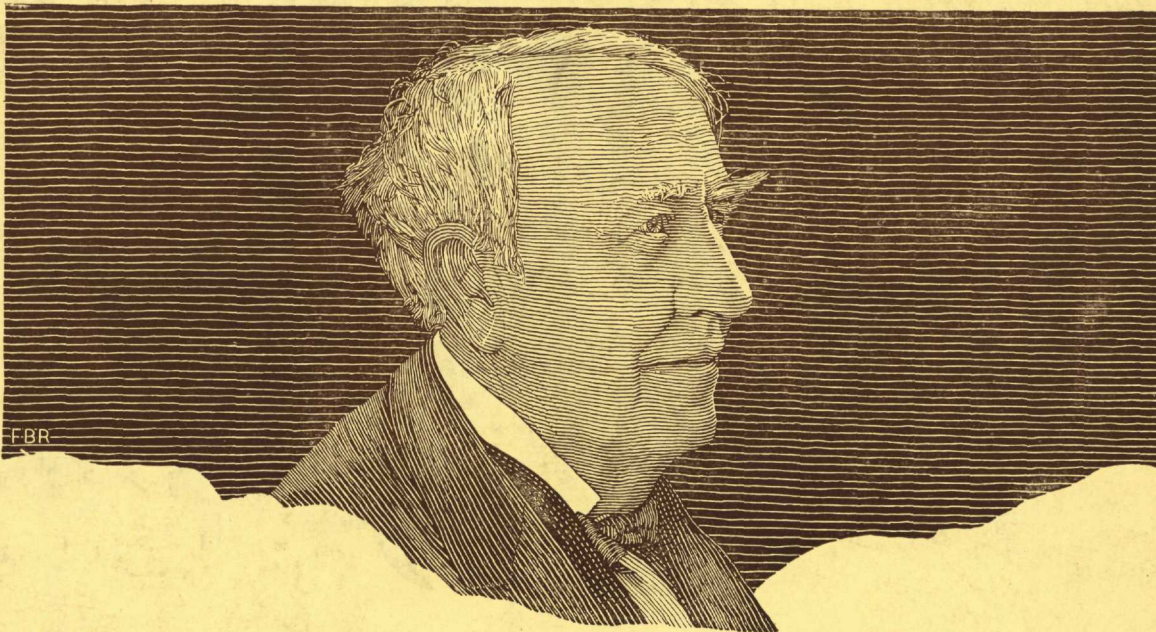
All this, so that when a cue is spoken in factory or home, on farm or railroad, on the sea or in the air, they may be ready.

This advertisement is eighth in a vocational series, outlining the fields for engineering achievement in the Westinghouse organization. A copy of the entire series will be sent to anyone requesting it.

Westinghouse

ACHIEVEMENT & OPPORTUNITY





And he has lived to see it



In 1881 Edison shipped to the Paris Exposition his "Jumbo" dynamo—eighth wonder of the world. It could light 1000 lamps. Now there are G-E generators large enough to supply current for over a million lamps, each with four times the candle-power of the lamp of 1881.

The General Electric Company produces other electrical apparatus which makes it possible to transmit power over great distances. It has put electricity in seven-league boots. In its laboratories, scientists are now experimenting with voltages ten times as great as the highest now in use.

If you are interested in learning more about what electricity is doing, write for Reprint No. AR391 containing a complete set of these advertisements.

Back in 1885, Thomas A. Edison succeeded in transmitting electricity at 220 volts for one mile—an achievement and a promise.

The promise was fulfilled a few months ago, when electricity at 220,000 volts was transmitted two hundred and forty miles to supply Los Angeles with light and power.

Now five billion dollars are invested in electric power plants. A stupendous figure that testifies to the alertness of thousands of college-trained men who have been leaders in the production and use of electric power.

The electrical era has only dawned. Each year some new machine or discovery makes it possible to apply electricity in unexpected ways. The graduate of today will find electricity directly or indirectly a means for even greater accomplishments, no matter what his calling in life may be.

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GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, NEW YORK